

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): An air separator, comprising:

an air compression means for taking in air from the outside and compressing the air at a low pressure,

an oxygen concentrating means for concentrating oxygen gas provided with an adsorbent for adsorbing nitrogen gas that is contained in the air compressed by the air compression means,

an oxygen/air compression means for further compressing oxygen-rich compressed air (X) passed through the oxygen concentrating means,

a heat exchanger for cooling oxygen-rich compressed air (Y) passed through the oxygen/air compression means, and

a rectification tower for taking out oxygen gas by separating the oxygen-rich compressed air (Y) passed through the heat exchanger so as to be cooled to a low temperature by utilizing differences in boiling points of elemental gases,

wherein the oxygen concentrating means is an adsorption tower having an upstream side and a downstream side, the upstream side of the tower being filled with a silica gel as an adsorbent for adsorbing impurities including moisture and hydrocarbon contained in the compressed air, the downstream side of the tower being filled with a molecular sieve as an adsorbent for adsorbing nitrogen gas contained in the compressed air at a downstream side,

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wherein the air compression means, the oxygen concentrating means and the oxygen/air compression means are arranged in one line and a total amount of the compressed air compressed by the air compression means is supplied to the oxygen/air compression means.

2. (Cancelled)

3. (Previously Presented): The air separator as set forth in claim 1, further comprising an elimination means for eliminating impurities in the oxygen-rich compressed air (Y) between the oxygen/air compression means and the heat exchanger.

4. (Cancelled)

5. (Previously Presented): The air separator as set forth in claim 1, wherein a part of the air compressed by the air compression means is not passed through the oxygen concentrating means, but is directly supplied to an inlet path for introducing the oxygen-rich compressed air (X) passed through the oxygen concentrating means into the oxygen/air compression means.

6. (Cancelled)

7. (Previously Presented): The air separator as set forth in claim 3, wherein a part of the air compressed by the air compression means is not passed through the oxygen concentrating

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means, but is directly supplied to an inlet path for introducing the oxygen-rich compressed air (X) passed through the oxygen concentrating means into the oxygen/air compression means.

8. (Cancelled)